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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

LC K-1898

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FILE 5401

REPLY TO THE ATTENTION OF:

SRF-5J

Mr. Johnny W. Reising
United States Department of Energy
Feed Materials Production Center
P.O. Box 398705
Cincinnati, Ohio 45239-8705

RE: Draft Wetland
Mitigation Assessment

Dear Mr. Reising:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the United States Department of Energy's (U.S. DOE) draft preliminary wetland mitigation assessment.

The assessment evaluates three alternative for their potential of supporting on-property wetland mitigation and provides a recommendation for the most feasible alternative to address the commitment of fifteen (15) acres of mitigated wetlands.

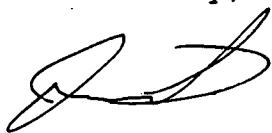
U.S. EPA has numerous comments on the above document. Therefore, U.S. EPA disapproves the wetland mitigation assessment pending incorporation of adequate responses to the attached comments. U.S. DOE must submit responses to comments and a revised document within thirty (30) days receipt of this letter.

(Gerace(p)
partial
action response
to DOE-0908-97
(10475)

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Please contact me at (312) 886-0992 if you have any questions regarding this matter.

Sincerely,



James A. Saric
Remedial Project Manager
Federal Facilities Section
SFD Remedial Response Branch #2

Enclosure

cc: Tom Schneider, OEPA-SWDO
Bill Murphie, U.S. DOE-HDQ
John Bradburne, FERMCO
Charles Little, FERMCO
Terry Hagen, FERMCO
Tom Walsh, FERMCO

ENCLOSURE

**TECHNICAL REVIEW COMMENTS ON THE
"DRAFT PRELIMINARY WETLAND MITIGATION ASSESSMENT"
FERNALD ENVIRONMENTAL MANAGEMENT PROJECT, FERNALD, OHIO**

GENERAL COMMENTS

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Not applicable (NA) Page #: NA

Line #: NA

Original General Comment #: 1

Comment: The text does not clearly present the methodology used to assess potential mitigation sites. Specifically, the methodology appears to be both inadequate and inappropriate to assess successful, potential wetland restoration and creation sites. The methodology should include detailed information regarding topographic, geologic, hydrologic, soil, climatic, and biological factors that need assessment to determine the feasibility of the potential wetland creation or restoration sites.

In addition, the text supplies inadequate explanation or rationale supporting the methodology apparently used. For example, discussion of data regarding the following is lacking or inadequate: soil types, depths, and distribution; bedrock nature and depth; perched water and groundwater depth, flow, and quality; hydrologic data such as drainage area sizes, drainage systems within each drainage area, runoff volumes, and peak discharge rates during storm events; vegetative cover; and climatic information, such as annual precipitation and evaporation rates. Because the presence of water in sufficient abundance and duration to develop hydric soil characteristics and support hydrophytic vegetation is the most critical wetland parameter, water balances need to be calculated for areas of interest. The assessment should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Executive Summary Page #: E-1

Line #: NA

Original General Comment #: 2

Comment: The text discusses a conceptual proposal for addressing wetland mitigatory requirements discussed during a June 20, 1995, meeting. The text should be revised to provide more background information about the development of this conceptual proposal and a justification for it.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.0

Page #: NA

Line #: NA

Original General Comment #: 3

Comment: This section describes the three alternatives for on-property wetlands mitigation. In general, the text provides inadequate descriptions of site soils, hydrology, and vegetation. The hydrologic data presented are very limited, and the text briefly discusses surface water flow only. As discussed in Original General Comment No. 1, information about depth to the water table and

perched water, soil saturation, surface water runoff, evaporation, and precipitation is noticeably absent. Soils data (such as soil composition and distribution) and vegetation data (such as community type and density) are also absent. In addition, topographic discussion is limited to the stream channel and banks. More thorough discussion of these types of data is needed to accurately assess the wetland creation or restoration potential of each alternative. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.0

Page #: NA

Line #: NA

Original General Comment #: 4

Comment: This section discusses a watershed study developed to assess general surface water quality and to evaluate surface water flow rates. The purpose of this study and its applicability to the wetland mitigation assessment is unclear. The text also does not clearly define watershed systems, explain how each system was chosen for study, or explain how flume measurements and hydrologic calculations meet wetland mitigation assessment objectives. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.1

Page #: NA

Line #: NA

Original General Comment #: 5

Comment: According to the text, samples were analyzed to determine nutrient concentrations and mass loadings. Although this information may be useful for evaluating watershed surface water characteristics, the data are unnecessary to assess the viability and success of wetland restoration or creation. As previously mentioned, data collection and evaluation should be focused on the factors affecting the presence of sufficient water for a sufficient duration to support hydrophytic vegetation. The text should be revised to address this issue.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Conclusion

Page #: NA

Line #: NA

Original General Comment #: 6

Comment: The conclusions presented are generally based on insufficient or inappropriate data. For example, Alternative 1 is based on the assumption that the stream will be used as the sole water source for potential wetland creation at the site, which would require extensive stream bank excavation. Groundwater or surface water runoff contribution to the site's water balance is not considered. Limited water availability is also named as a primary reason for eliminating Alternative 2 as a potential wetland creation or restoration site. This conclusion appears to be inappropriate because it is based on insufficient data. The text should be revised to address these issues.

SPECIFIC COMMENTS

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Executive Summary (ES) Page #: E-2

Line #: 2

Original Specific Comment #: 1

Comment: The text states that some alternatives are not feasible based on the issue of habitat fragmentation. The text should be revised to clarify that some sites are not feasible because of the lack of necessary hydrology and soils, as well as habitat fragmentation.

Commenting Organization: U.S. EPA

Section #: 1.0

Page #: 1-1

Commentor: Saric

Line #: 11

Original Specific Comment #: 2

Comment: The text states that a mitigatory ratio of 1 to 1.5 acres was established at the June 20, 1995 meeting. It should be verified that this agreement is in keeping with any previously established memoranda of agreement (MOA) between state and federal agencies, including the U.S. Army Corps of Engineers.

Commenting Organization: U.S. EPA

Section #: 1.0

Page #: 1-2

Commentor: Saric

Line #: 5

Original Specific Comment #: 3

Comment: The text states that surface water quality and flow within two 40-acre watershed systems were analyzed. The watershed systems should be identified on a topographic figure, and the text should explain how the watersheds were identified. Also, the "influent and effluent" referred to in text only seems to pertain to surface water sampling locations within some kind of stream. Influent should include precipitation, storm water runoff from contributing drainage areas, base flow from streams and surface sources, seepage and springs from groundwater sources, and any water artificially added to the watershed. Effluent should include evaporation, plant transpiration, deep percolation below substrates, surface base flow, storm water flow, and water artificially removed from the watershed. In addition, characterization should also include water stored on the surface and in substrate pore spaces. The watershed characterization water balance information does not need to be measured in the field but can be calculated using scientifically accepted tables, figures, and methods appropriate for the site. The water quality sampling data are unnecessary to determine the potential wetland mitigation feasibility or lost wetland functions. The methodology and text should be revised accordingly.

Commenting Organization: U.S. EPA

Section #: 1.0

Page #: 1-2

Commentor: Saric

Line #: 16

Original Specific Comment #: 4

Comment: The text indicates that sampling occurred in 1995 and 1996 during seven independent storm events and that further study is needed. As mentioned in the Original General Comments No. 1 and 3, additional study information should include site or area climatic data, including average annual precipitation. This information is critical in assessing site water storage capabilities and eventual design considerations. The mitigation assessment and corresponding text should be revised to address these issues.

Commenting Organization: U.S. EPA

Section #: Figure 1

Page #: 2-2

Commentor: Saric

Line #: NA

Original Specific Comment #: 5

Comment: The figure fails to label Paddy's Run or to provide a map scale. The figure should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Figure 2

Page #: 3-2

Line #: NA

Original Specific Comment #: 6

Comment: The figure should indicate the location of the impacted wetlands and the map scale. In addition, the figure should include a legend explaining the wetland classification system used in the figure. The figure legend should clarify that the wetlands depicted are jurisdictional wetlands. The figure should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Figure 3

Page #: 4-2

Line #: NA

Original Specific Comment #: 7

Comment: The figure fails to label Paddy's Run or to include a map scale. The figure should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.0

Page #: 4-1

Line #: 2

Original Specific Comment #: 8

Comment: The text indicates that the alternatives include Paddy's Run Corridor, Northern Forested/Northern Isolated Wetland, and Northern Forested Wetland Areas. Figure 3 shows Alternatives 1, 2, and 3. The text and figure alternative titles should be revised to correspond.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.1

Page #: 4-1

Line #: 4

Original Specific Comment #: 9

Comment: The text indicates that three sampling sites were chosen and that samples were collected from three "locations in the center of the stream." Because the size of Paddy's Run Corridor is not indicated and the sampling locations are not shown, it is unclear whether the sampling is adequate or appropriate. Further, it is unclear why the stream bed was sampled rather than the potential footprint of the mitigation area. The text should be revised to explain the purpose of the sampling activity and to explain why the hydrology and soils outside the stream channel were not evaluated.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.1

Page #: 4-3

Line #: 15

Original Specific Comment #: 10

Comment: The text indicates that extensive stream bank excavation would be required to supply wetland hydrology for this alternative, which assumes that the stream is the only source of water for the alternative presented; however, not enough site characterization data about hydrology, soils, topography, or the subsurface is presented to support this assumption. Also, redirecting stream flow would alter the ecological habitat. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.2

Page #: 4-4

Line #: 4

Original Specific Comment #: 11

Comment: The text implies that inundation of the meadow would be required to mitigate the impacted wetlands; however, wetlands require the presence of sufficient water of such duration to support hydrophytic vegetation. Inundation is therefore not necessarily required for successful wetland mitigation. The text should be revised to address this issue.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.2

Page #: 4-4

Line #: 16

Original Specific Comment #: 12

Comment: The text indicates that surface water flow restriction at this site "would preclude implementation of Alternative 3" and assumes that extensive excavation would be required "to lower the elevation for adequate water supply." The possibility of implementing more than one of the three alternatives has not previously been discussed. The text should clearly indicate that more than one alternative could be simultaneously implemented and that the selection of Alternative 2 would prohibit the selection of Alternative 3. It is also unclear why extensive excavation is required to provide an adequate water supply. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 4.3

Page #: 4-5

Line #: 7

Original Specific Comment #: 13

Comment: The text indicates that Alternative 3 is conducive for wetland mitigation but does not present sufficient and adequate data to support this statement. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Figure 4

Page #: 5-1

Line #: NA

Original Specific Comment #: 14

Comment: Although the figure contains contour lines, the corresponding elevations and contour intervals are not shown. In addition, the legend should indicate that the wetland areas shown are jurisdictional wetlands, if applicable. The figure should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: Figure 5

Page #: 5-4

Line #: NA

Original Specific Comment #: 15

Comment: The figure apparently lacks contour lines, elevations, and intervals. In addition, it is unclear if the wetland area depicted is the jurisdictional wetland identified earlier in the document. The figure should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.2

Page #: 5-5

Line #: NA

Original Specific Comment #: 16

Comment: The text discusses mass loading and sampling parameter results associated with seven "storm events" over the course of 7 months (October through April 1995). As previously mentioned, although this information may be useful in addressing water quality issues associated with wetland creation or restoration, it is unnecessary for assessing the feasibility of wetland creation or restoration. In addition, information about seven "storm events" during 7 months, including the winter months, is inadequate to assess hydrologic factors associated with wetland creation or restoration viability. The text should be revised to address these issues.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.2

Page #: 5-7

Line #: 1

Original Specific Comment #: 17

Comment: The text states that total runoff volumes were calculated for each sampling location shown in Table 1. It is unclear how the total runoff volumes were calculated. The text should be revised to address this issue.

Commenting Organization: U.S. EPA

Commentor: Saric

Section #: 5.2

Page #: 5-8

Line #: 1

Original Specific Comment #: 18

Comment: The text states that preliminary calculations indicate that 9.8 million gallons of water would be required to inundate 15 acres to a 2-foot depth. It is unclear how this number was calculated and why the 2-foot depth was selected. Also, as previously mentioned, a wetland need not be inundated to be considered a wetland. In addition, the text states that Alternative 3 is recommended for wetland mitigation based on accessibility, near-term implementation, and supporting watershed data. The assessment apparently does not provide information adequate enough to support this statement. Although accessibility is an important factor, it should not be considered a major factor in assessing wetland creation or restoration feasibility. Finally, it is unclear what is meant by "near-term implementation," because this term has not been previously discussed in the text. The text should be revised to address these issues.